

HEAT EXCHANGER POLYMERIZATION REACTORS FOR MANUFACTURING DRAG REDUCING AGENTS

Abstract of the Disclosure

5 Temperature control and efficient heat transfer are important to producing
high quality polymer drag reducing agents from alpha-olefin and/or other mono-
mers. Many polymerization reactions are exothermic, and controlling or minimizing
the exotherm combined with low reaction temperatures yields high molecular weight
and, for poly(alpha-olefins), high quality drag reducing agent polymers. It has been
found that a shell and tube heat exchanger-type reactor, with the inner tubes host-
10 ing the reaction mixture and a coolant circulating through the shell side gives good
temperature control. The use of appropriate release agents helps to keep the inner
reaction chambers from building up any polymer residue. These reactors can be
operated in a continuous filling and harvesting mode to facilitate the continuous
production of polymer drag reducing agent and related formulations.

15